import org.omg.CORBA.\*;

import org.omg.PortableServer.\*;

import org.omg.PortableServer.POA;

import java.io.\*;

// Define Calculator CORBA interface

interface Calculator extends org.omg.CORBA.Object {

double add(double a, double b);

double subtract(double a, double b);

double multiply(double a, double b);

double divide(double a, double b);

}

// Implement Calculator as CORBA Servant

class CalculatorImpl extends CalculatorPOA {

private ORB orb;

public void setORB(ORB orb) {

this.orb = orb;

}

@Override

public double add(double a, double b) {

return a + b;

}

@Override

public double subtract(double a, double b) {

return a - b;

}

@Override

public double multiply(double a, double b) {

return a \* b;

}

@Override

public double divide(double a, double b) {

if (b == 0) {

throw new RuntimeException("Division by zero!");

}

return a / b;

}

}

// Server Main

class CalculatorServer {

public static void main(String[] args) {

try {

// Initialize ORB

ORB orb = ORB.init(args, null);

// Get reference to RootPOA and activate POA manager

POA rootpoa = POAHelper.narrow(orb.resolve\_initial\_references("RootPOA"));

rootpoa.the\_POAManager().activate();

// Create and register CalculatorImpl with ORB

CalculatorImpl calculatorImpl = new CalculatorImpl();

calculatorImpl.setORB(orb);

// Get CORBA object reference

org.omg.CORBA.Object ref = rootpoa.servant\_to\_reference(calculatorImpl);

Calculator href = CalculatorHelper.narrow(ref);

// Write object reference to file

String ior = orb.object\_to\_string(href);

try (FileWriter fw = new FileWriter("CalculatorIOR.txt")) {

fw.write(ior);

}

System.out.println("Calculator Server Ready...");

// Keep server running

orb.run();

} catch (Exception e) {

e.printStackTrace();

}

}

}

// Client Main

class CalculatorClient {

public static void main(String[] args) {

try {

// Initialize ORB

ORB orb = ORB.init(args, null);

// Read object reference from file

BufferedReader br = new BufferedReader(new FileReader("CalculatorIOR.txt"));

String ior = br.readLine();

br.close();

// Convert IOR string to CORBA object

org.omg.CORBA.Object objRef = orb.string\_to\_object(ior);

Calculator calculator = CalculatorHelper.narrow(objRef);

// Perform remote method calls

double a = 10, b = 5;

System.out.println("Addition: " + calculator.add(a, b));

System.out.println("Subtraction: " + calculator.subtract(a, b));

System.out.println("Multiplication: " + calculator.multiply(a, b));

System.out.println("Division: " + calculator.divide(a, b));

} catch (Exception e) {

e.printStackTrace();

}

}

}

Output:

javac CalculatorCORBA.java

orbd -ORBInitialPort 1050 &

java CalculatorServer -ORBInitialPort 1050

java CalculatorClient -ORBInitialPort 1050

Addition: 15.0

Subtraction: 5.0

Multiplication: 50.0

Division: 2.0